LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A planar lightwave circuit (PLC) module for conditioning light output from a tunable laser designed to generate light at a target wavelength, the PLC module comprising:

a substrate;

a primary waveguide embedded in said substrate, said primary waveguide having an input end for receiving light from the tunable laser and an output end for outputting said light;

at least a first secondary waveguide embedded in said substrate, wherein a portion thereof is located close enough to a portion of the primary waveguide so that said first secondary waveguide ~~receiving~~ receives a first portion of said light from the tunable laser by direct or indirect evanescent coupling from said primary waveguide; and

a filter means having a passband centered on the target wavelength and coupled to an output of the first secondary waveguide to receive said first portion of light, wherein said filter means is ~~adapted to generate~~ for generating a signal related to the intensity of said first portion of light in the passband centered on the target wavelength.

2. (original) The PLC module of claim 1, further comprising a second secondary waveguide that receives a second portion of said light from the tunable laser and a power monitoring photosensor coupled to an output of the second secondary waveguide to receive said second portion of light, wherein said photosensor is adapted to generate a signal related to the intensity of said second portion of light.

3. (original) The PLC module of claim 2, wherein the power monitoring photosensor comprises a photodiode.

4. (original) The PLC module of claim 2, wherein said secondary waveguides each receive a

respective portion of said light from the tunable laser by direct or indirect evanescent coupling from said primary waveguide.

5. (original) The PLC module of claim 1, wherein said substrate is a silica or silicon substrate and the waveguides are patterned silicon oxide waveguides embedded in said substrate.

6. (original) The PLC module of claim 1, wherein the target wavelength is one of a plurality of different target wavelengths.

7. (original) The PLC module of claim 6, wherein the filter is a tunable filter the passband of which can be selectively centered on any of the plurality of target wavelengths.

8. (original) The PLC module of claim 6, wherein the filter is a multiple-output filter having a plurality of filters, one for each of the plurality of target wavelengths, each of said filters having a passband centered on a respective one of the plurality of target wavelengths and adapted to generate a signal related to the intensity of said first portion of light in the respective passband of said each filter, whereby said multiple-output filter provides a plurality of output signals related, respectively, to the intensity of said first portion of light in passbands centered on each of the plurality of target wavelengths, respectively.

9. (original) The PLC module of claim 8, wherein said multiple-output filter comprises a reflectively coupled zigzag waveguide.

10. (original) The PLC module of claim 8, wherein said multiple-output filter comprises:

a plurality of substantially identical distributed dielectric multilayer stack filters mounted in the substrate, each multilayer stack filter having a passband determined in part by the angle at which filtered light impinges on said filter;

a plurality of secondary filter waveguides, one for each of the multilayer stack filters, each of the plurality of secondary filter waveguides receiving light from said first secondary waveguide and patterned in the substrate so as to terminate at a unique angle with respect to its corresponding multilayer stack filter so that each multilayer

stack filter has a passband centered on a respective one of the plurality of target wavelengths.

11. (original) The PLC module of claim 1, wherein said primary waveguide comprises a conditioning device between its input and output ends for conditioning said light so that the primary waveguide provides, at its output end, light from the tunable laser conditioned by the conditioning device.

12. (original) The PLC module of claim 11, said conditioning device is one of a semiconductor optical amplifier and a modulator.

13. (canceled)

14. (currently amended) A system for conditioning light output from a tunable laser designed to generate light at a target wavelength, the system comprising:

a planar lightwave circuit (PLC) module comprising:

a substrate;

a primary waveguide embedded in said substrate, said primary waveguide having an input end for receiving light from the tunable laser and an output end for outputting said light;

at least a first secondary waveguide embedded in said substrate, wherein a portion thereof is located close enough to a portion of the primary waveguide so that said first secondary waveguide ~~receiving~~ receives a first portion of said light from the tunable laser by direct or indirect evanescent coupling from said primary waveguide; and

a filter means having a passband centered on the target wavelength and coupled to an output of the first secondary waveguide to receive said first portion of light, wherein said filter means is ~~adapted to generate~~ for generating a filter output signal related to the intensity of said first portion of light in the passband centered on the target wavelength; and

a processor means for generating, based on said filter output signal, a control signal, to

adjust the lasing wavelength of the tunable laser to achieve or maintain the target wavelength.

15. (original) The system of claim 14, further comprising the tunable laser.

16. (original) The system of claim 14, further comprising driver circuitry for receiving said control signal and for generating, in response to said control signal, analog signals to control the lasing wavelength of the tunable laser.

17. (new) The system of claim 14, wherein:

the target wavelength is one of a plurality of different target wavelengths;

the filter means is a multiple-output filter means having a plurality of substantially identical distributed dielectric multilayer stack filters mounted in the substrate, one for each of the plurality of target wavelengths, each of said multilayer stack filters having a passband determined in part by the angle at which filtered light impinges on said filter and centered on a respective one of the plurality of target wavelengths and adapted to generate a signal related to the intensity of said first portion of light in the respective passband of said each filter, whereby said multiple-output filter provides a plurality of output signals related, respectively, to the intensity of said first portion of light in passbands centered on each of the plurality of target wavelengths, respectively; and

the PLC module further comprises a plurality of secondary filter waveguides, one for each of the multilayer stack filters, each of the plurality of secondary filter waveguides receiving light from said first secondary waveguide and patterned in the substrate so as to terminate at a unique angle with respect to its corresponding multilayer stack filter so that each multilayer stack filter has a passband centered on a respective one of the plurality of target wavelengths.

18. (new) A planar lightwave circuit (PLC) module for conditioning light output from a tunable laser means for generating light at a target wavelength, the PLC module comprising:

a substrate means;

a primary waveguide means embedded in said substrate means, said primary waveguide means having an input end means for receiving light from the tunable laser and an output end means for outputting said light;

a secondary waveguide means embedded in said substrate means, wherein a portion thereof is located close enough to a portion of the primary waveguide means so that said secondary waveguide means receives a first portion of said light from the tunable laser means by direct or indirect evanescent coupling from said primary waveguide means; and

a filter means having a passband centered on the target wavelength and coupled to an output of the secondary waveguide means to receive said first portion of light, wherein said filter means is for generating a signal related to the intensity of said first portion of light in the passband centered on the target wavelength.

19. (new) A planar lightwave circuit (PLC) module for conditioning light output from a tunable laser designed to generate light at one target wavelength of a plurality of different target wavelengths, the PLC module comprising:

a substrate;

a primary waveguide embedded in said substrate, said primary waveguide having an input end for receiving light from the tunable laser and an output end for outputting said light;

at least a first secondary waveguide embedded in said substrate;

means for coupling the first secondary waveguide to the primary waveguide so that the first secondary waveguide receives a first portion of tunable laser light from the primary waveguide;

a multiple-output filter means coupled to an output of the first secondary waveguide to receive said first portion of light, said multiple-output filter means comprising a plurality of substantially identical distributed dielectric multilayer stack filter means mounted in the substrate means, one multilayer stack filter means for each of the plurality of target wavelengths, each of said multilayer stack filter means having a passband determined in part by the angle at which filtered light impinges on said filter, each said passband centered on a respective one of the plurality of the target

wavelengths, wherein each said multilayer stack filter means is for generating a signal related to the intensity of said first portion of light in the respective passband of said each multilayer stack filter means, whereby said multiple-output filter means provides a plurality of output signals related, respectively, to the intensity of said first portion of light in passbands centered on each of the plurality of target wavelengths, respectively; and

a plurality of secondary filter waveguide means, one for each of the multilayer stack filter means, each of the plurality of secondary filter waveguide means receiving light from said first secondary waveguide means and patterned in the substrate means so as to terminate at a unique angle with respect to its corresponding multilayer stack filter means so that each multilayer stack filter means has a passband centered on a respective one of the plurality of target wavelengths.